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SEQUENCE LISTING

<110> Imperial College Innovations Ltd

<120> Engineering Redox Proteins

<130> Q88296

<140>
<141>

<160> 11

<170> PatentIn Ver. 2.1

<210> 1
<211> 84
<212> DNA
<213> Escherichia coli

<220>
<221> CDS
<222> (1)..(84)
<223> Helix 1 of E.coli repressor of primer (rop)

<400> 1
acc aaa caa gaa aaa acc gcc ctt aac atg gcc cgc ttt atc aga agc 48
Thr Lys Gln Glu Lys Thr Ala Leu Asn Met Ala Arg Phe Ile Arg Ser
1 5 10 15

cag aca tta acg ctt ctg gag aaa ctc aac gag ctg 84
Gln Thr Leu Thr Leu Leu Glu Lys Leu Asn Glu Leu
20 25

<210> 2
<211> 28
<212> PRT
<213> Escherichia coli

<400> 2
Thr Lys Gln Glu Lys Thr Ala Leu Asn Met Ala Arg Phe Ile Arg Ser
1 5 10 15

Gln Thr Leu Thr Leu Leu Glu Lys Leu Asn Glu Leu
20 25

<210> 3
<211> 84
<212> DNA
<213> Escherichia coli

<220>
<221> CDS

<222> (1)..(84)
<223> Helix 2 of rop

<400> 3
gat gaa cag gca gac atc tgt gaa tcg ctt cac gac cac gct gat gag 48
Asp Glu Gln Ala Asp Ile Cys Glu Ser Leu His Asp His Ala Asp Glu
1 5 10 15

ctt tac cgc agc tgc ctt gcc cgt ttc ggc gac gac 84
Leu Tyr Arg Ser Cys Leu Ala Arg Phe Gly Asp Asp
20 25

<210> 4
<211> 28
<212> PRT
<213> Escherichia coli

<400> 4
Asp Glu Gln Ala Asp Ile Cys Glu Ser Leu His Asp His Ala Asp Glu
1 5 10 15

Leu Tyr Arg Ser Cys Leu Ala Arg Phe Gly Asp Asp
20 25

<210> 5
<211> 192
<212> DNA
<213> Escherichia coli

<220>
<221> CDS
<222> (1)..(192)
<223> wild type dimeric rop

<400> 5
atg ggt acc aaa caa gaa aaa acc gcc ctt aac atg gcc cgc ttt atc 48
Met Gly Thr Lys Gln Glu Lys Thr Ala Leu Asn Met Ala Arg Phe Ile
1 5 10 15

aga agc cag aca tta acg ctt ctg gag aaa ctc aac gag ctg gac gcg 96
Arg Ser Gln Thr Leu Thr Leu Leu Glu Lys Leu Asn Glu Leu Asp Ala
20 25 30

gat gaa cag gca gac atc tgt gaa tcg ctt cac gac cac gct gat gag 144
Asp Glu Gln Ala Asp Ile Cys Glu Ser Leu His Asp His Ala Asp Glu
35 40 45

ctt tac cgc agc tgc ctt gcc cgt ttc ggc gac gac ggt gaa aac ctg 192
Leu Tyr Arg Ser Cys Leu Ala Arg Phe Gly Asp Asp Gly Glu Asn Leu
50 55 60

<210> 6

<211> 64
<212> PRT
<213> Escherichia coli

<400> 6
Met Gly Thr Lys Gln Glu Lys Thr Ala Leu Asn Met Ala Arg Phe Ile
1 5 10 15

Arg Ser Gln Thr Leu Thr Leu Leu Glu Lys Leu Asn Glu Leu Asp Ala
20 25 30

Asp Glu Gln Ala Asp Ile Cys Glu Ser Leu His Asp His Ala Asp Glu
35 40 45

Leu Tyr Arg Ser Cys Leu Ala Arg Phe Gly Asp Asp Gly Glu Asn Leu
50 55 60

<210> 7
<211> 384
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Monomeric rop containing all 4 helices in one continuous sequence

<220>
<221> CDS
<222> (1)..(384)
<223> Monomeric rop consisting of helices 1-1'-2'-2 and helices 1 and 1', and 2' and 2 are connected by GGGGG loops

<400> 7
atg ggt acc aaa caa gaa aaa acc gcc ctt aac atg gcc cgc ttt atc 48
Met Gly Thr Lys Gln Glu Lys Thr Ala Leu Asn Met Ala Arg Phe Ile
1 5 10 15

aga agc cag aca tta acg ctt ctg gag aaa ctc aac gag ctg ggt ggc 96
Arg Ser Gln Thr Leu Thr Leu Leu Glu Lys Leu Asn Glu Leu Gly Gly
20 25 30

ggt ggc ggt acc aaa caa gag aag acc gcc ctt aac atg gcc cgc ttt 144
Gly Gly Gly Thr Lys Gln Glu Lys Thr Ala Leu Asn Met Ala Arg Phe
35 40 45

atc aga tct cag aca tta acg ctt cta gag aag ctt aac gag ctc ggg 192
Ile Arg Ser Gln Thr Leu Thr Leu Leu Glu Lys Leu Asn Glu Leu Gly
50 55 60

gcg gat gaa cag gca gac ata tgt gaa tcg ctt cac gac cac gct gat 240
Ala Asp Glu Gln Ala Asp Ile Cys Glu Ser Leu His Asp His Ala Asp
65 70 75 80

```
gag ctt tac cgc agc tgc ctt gcc cgt ttc ggt ggc ggt ggc ggt gcg   288
Glu Leu Tyr Arg Ser Cys Leu Ala Arg Phe Gly Gly Gly Gly Gly Ala
                 85                  90                  95

gat gaa cag gca gac atc tgt gaa tcg ctt cac gac cac gct gat gag   336
Asp Glu Gln Ala Asp Ile Cys Glu Ser Leu His Asp His Ala Asp Glu
            100                 105                 110

ctt tac cgc agc tgc ctt gcc cgt ttc ggc gac gac ggt gaa aac ctg   384
Leu Tyr Arg Ser Cys Leu Ala Arg Phe Gly Asp Asp Gly Glu Asn Leu
        115                 120                 125
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<210> 8
<211> 128
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Monomeric rop containing all 4 helices in one continuous sequence

<400> 8

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Met Gly Thr Lys Gln Glu Lys Thr Ala Leu Asn Met Ala Arg Phe Ile
  1               5                  10                  15

Arg Ser Gln Thr Leu Thr Leu Leu Glu Lys Leu Asn Glu Leu Gly Gly
             20                  25                  30

Gly Gly Gly Thr Lys Gln Glu Lys Thr Ala Leu Asn Met Ala Arg Phe
         35                  40                  45

Ile Arg Ser Gln Thr Leu Thr Leu Leu Glu Lys Leu Asn Glu Leu Gly
     50                  55                  60

Ala Asp Glu Gln Ala Asp Ile Cys Glu Ser Leu His Asp His Ala Asp
 65                  70                  75                  80

Glu Leu Tyr Arg Ser Cys Leu Ala Arg Phe Gly Gly Gly Gly Gly Ala
                 85                  90                  95

Asp Glu Gln Ala Asp Ile Cys Glu Ser Leu His Asp His Ala Asp Glu
            100                 105                 110

Leu Tyr Arg Ser Cys Leu Ala Arg Phe Gly Asp Asp Gly Glu Asn Leu
        115                 120                 125
```

<210> 9
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: psp7 upstream amplification sequence

<400> 9
gcgaaattaa tacgactca 19

<210> 10
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: asp4 downstream amplification sequence

<400> 10
gttggctgct gccaccgctg agc 23

<210> 11
<211> 128
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: RDM14.5

<400> 11
Met Gly Thr Lys Gln Glu Lys Thr Ala Leu Asn Met Ala Arg Phe Ile
1 5 10 15

Arg Ser Gln Thr Leu Thr Leu Leu Glu Lys Leu Asn Glu Leu Gly Gly
20 25 30

Gly Gly Gly Thr Lys Gln Glu Lys Thr Ala Leu Asn Met Ala Arg Phe
35 40 45

Ile Arg Ser Gln Thr Leu Thr His Leu Glu Lys Leu Asn Glu Leu Gly
50 55 60

Ala Asp Glu Gln Ala Asp Ile Cys Glu Ser Leu Ala Asp Trp Ala Asp
65 70 75 80

Glu Leu Tyr Arg Ser Cys Leu Ala Arg Phe Gly Gly Gly Gly Gly Ala
85 90 95

Asp Glu Gln Ala Asp Ile Cys Glu Ser Leu Ala Asp Trp Ala Asp Glu
100 105 110

His Tyr Arg Ser Cys Leu Ala Arg Phe Gly Asp Asp Gly Glu Asn Leu
115 120 125